

The Radiocarbon Chronology of Canchas Uckro : Implications for Understanding the Late Initial Period (1100–800 BC) in the Chavín Heartland

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8. The Radiocarbon Chronology of Canchas Uckro: Implications for Understanding the Late Initial Period (1100–800 BC) in the Chavín Heartland

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1. Introduction

In his posthumously published book *Chavín: Cultura matriz de la civilización andina*, Julio C. Tello (1960) reported the location of numerous archaeological sites that were discovered in 1919 during a reconnaissance of a transect along the Mosna/Puccha river between Chavín de Huántar and the upper Marañón. Several of these sites, such as Matibamba, Olayán, Gotush, and Uchku-machay, exhibited “megalithic” architecture and distinctive stone sculptures executed in the Chavín-style (Tello 1960: 147–157; see also Espejo 1951, 1955; Rojas Ponce 1958). In the ensuing decades, research in different parts of the Conchucos¹ region registered an even greater quantity of Initial Period and Early Horizon sites with Chavín material culture (e.g., Amat 1971, 1976; Burger 1982, 2008a: 697, 2008b; Diessl 2004; Herrera 2004; Ibarra 2004; Nesbitt 2023; Nesbitt et al. 2020, 2021; Orsini 2014). Though most of these sites are uninvestigated (but see Burger 1982; Nesbitt et al. 2020), we argue that studying them can make substantial contributions to understanding the historical, religious, and socioeconomic processes underlying the formation and development of Chavín de Huántar during the second and first millennia BC. However, to address these processes require more detailed information about their absolute chronologies and how they correspond to different moments in Chavín de Huántar’s history of occupation (c. 1100–500 BC; see discussion below).

To that end, this article presents new chronological data from Canchas Uckro, a late Initial Period ceremonial center and village site located just to the northeast of Chavín de Huántar. Bayesian analysis of 13 radiocarbon dates shows that Canchas Uckro was occupied between approximately 1100 and 800 BC. This suite of dates indicates that Canchas Uckro was contemporary with the foundation and early phases of Chavín de Huántar in the late Initial Period. Radiocarbon evidence also demonstrates that the site was suddenly abandoned just after 800 BC, which coincides with a time of substantial growth at Chavín de Huántar, as well as the expansion of the long-distance exchange networks that characterize the Chavín Interaction Sphere (c. 800/750–400 BC) (Burger and Nesbitt 2023). Using our high-resolution chronology, we posit that the abandonment of Canchas Uckro was the outcome of population movements into Chavín de Huántar as it

grew into a “proto-urban”, cosmopolitan center with significant interregional connections (Burger 1984, 2012).

2. Archaeological Investigations of Canchas Uckro

Since 2014, we have been investigating Initial Period and Early Horizon settlements situated along the Huaritambo and Puccha rivers to understand their relationships with Chavín de Huántar (Nesbitt 2023; Nesbitt et al. 2020, 2021). One of these sites is

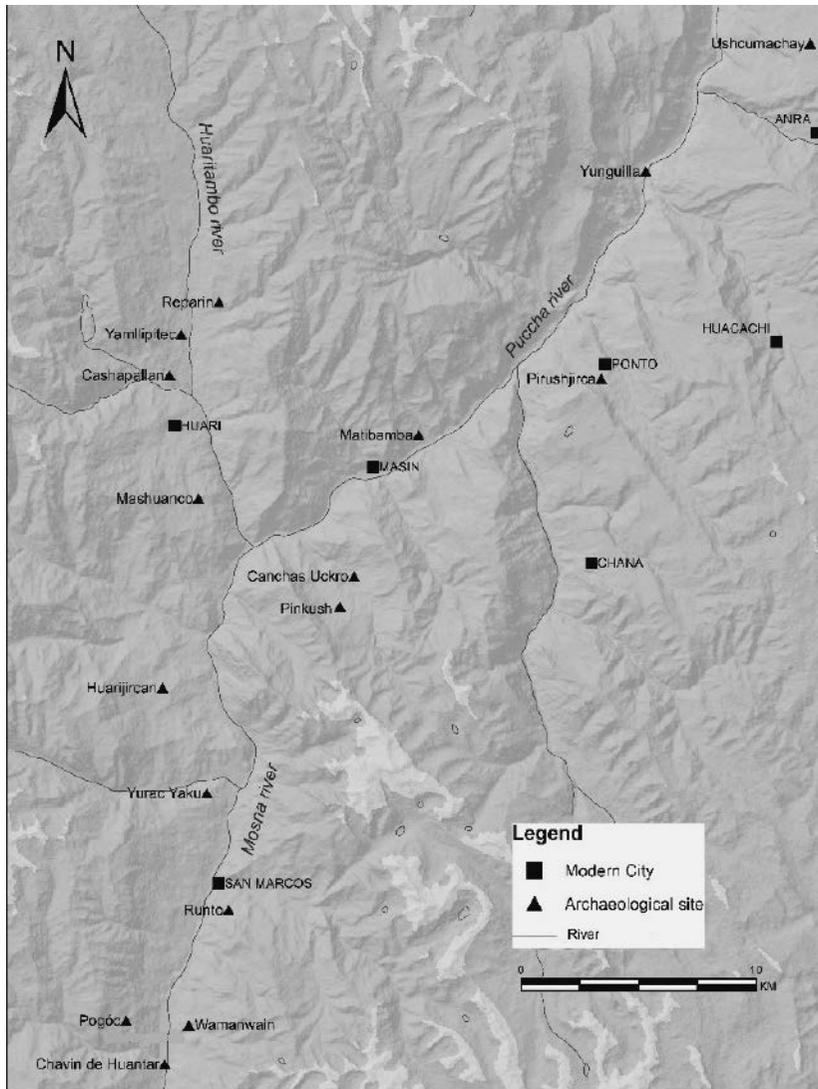


Figure 8-1 Map of the Huaritambo, Mosna, and Puccha drainages that show sites mentioned in the text (map produced by Bebel Ibarra Asencios)

Canchas Uckro, which is situated approximately 22 km to the northeast of Chavín de Huántar (Figure 8-1). Canchas Uckro is located at an altitude of 3,190 m.a.s.l. on top of a flat ridge overlooking the Puccha River. The site consists of a two-tiered platform that measures approximately 60 x 35 m and at least 3 m in height (Figure 8-2). Platform façade and retaining walls were manufactured from sandstone blocks that were quarried from outcrops found in the immediate vicinity of the site (e.g., Turner et al. 1999).

Archaeological investigations were first undertaken at Canchas Uckro in 2009 by Bebel Ibarra that consisted of a small wall clearing operation on the southern corner of the platform to define the site's architecture. As a result of this work, a portion of the platform's façade wall was exposed. Decorated pottery fragments recovered from the excavations resembled late Initial Period styles from the northern highlands (see discussion below). For this reason, we undertook investigations at Canchas Uckro between 2015 and 2019 with the intent of understanding some of the regional cultural processes of the Conchucos region at the end of the second millennium BC.

Our excavations concentrated on the main façade on the south side of the platform, as well as the lateral retaining walls on the southwest side. In addition, excavations were also undertaken on the platform summit (Figure 8-3). Based on these investigations we determined that Canchas Uckro functioned as both a ceremonial center and village settlement that was occupied over the course of two building phases in which the platform was expanded horizontally. In the following section, we describe the architecture associated with these two building phases, as well as the contexts of the associated radiocarbon samples that form the basis of the site's absolute chronology.



Figure 8-2 Photograph of the Canchas Uckro platform (photograph taken by Jason Nesbitt)

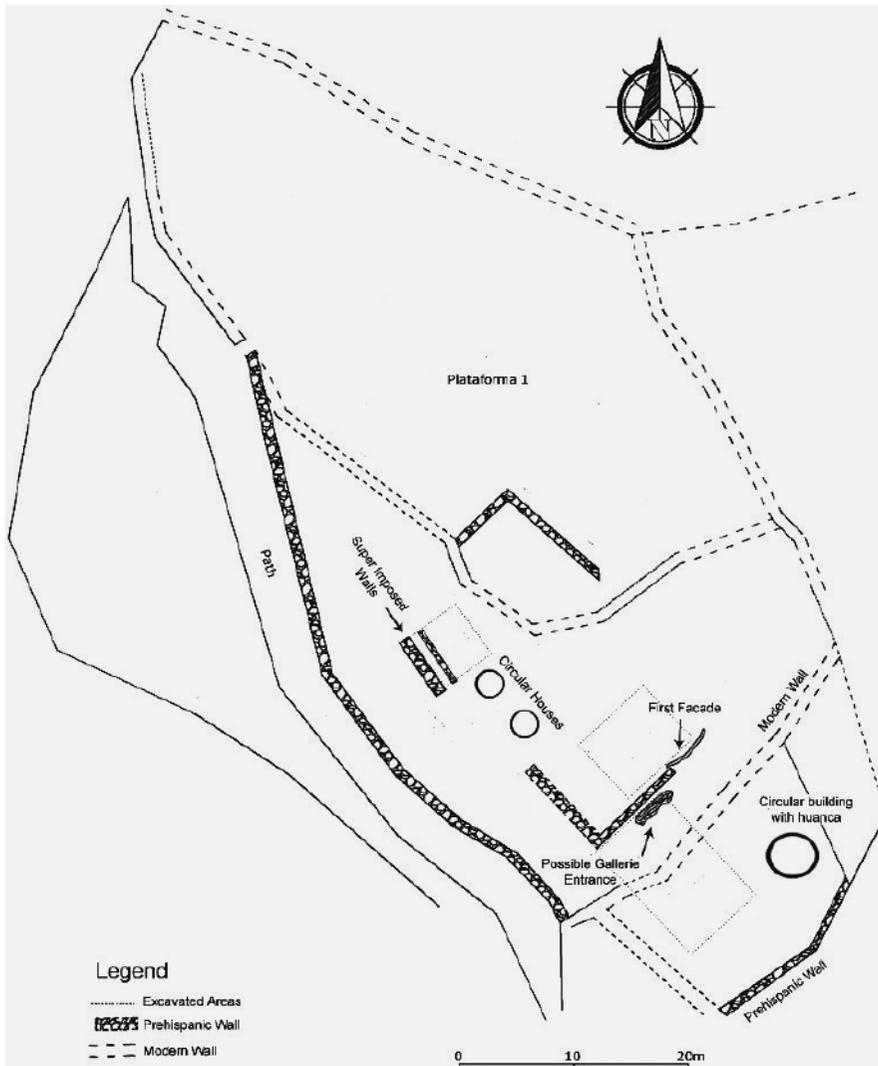


Figure 8-3 Plan map of Canchas Uckro (map produced by Bebel Ibarra Ascencios)

2.1 Architectural Sequence of Canchas Uckro: The First Phase

Evidence for the earliest architectural phase comes from excavations along the original façade wall (Wall 3) of the platform's upper most terrace. This wall measures ~1.2 m in height and follows the width of the platform. Stone masonry consists of quarried rectangular sandstone blocks that are set in mud mortar (Figure 8-4). While only a segment of the original façade was exposed, it appears that it was curved and the platform during this phase was probably rounded. If this was the case, Canchas Uckro may have resembled other archaeological sites situated along the nearby upper Marañón (Nesbitt et al. 2021), such as Chupán (Paredes Olvera 2002).

Excavations behind Wall 3 revealed a thick, unordered, fill that was at least 1.25 m in depth and characterized by large boulders, some of which were as large as 1.5 m in length (see Figure 8-4). Mixed within this fill were organic rich soils, with small quantities of charcoal and animal bone. It is probable that the organic materials were deposited during small consumption events associated with the construction of the platform (see below). A charcoal sample obtained from this fill context yielded a radiocarbon measurement of 2865 ± 29 BP (DAMS-015837) (see Table 8-1 for calibrated radiocarbon dates).

Associated with the first phase façade wall was a collapsed megalithic structure (Figure 8-5). The intact part of this building consisted of a massive, rectangular stone that measured 3.36 m in length (Figure 8-6). Based on the shape and position of this stone, we believe that it formed the roof of a gallery, a building type common at Chavín de Huántar (Burger 1992; Kembel 2008; Rick 2017). Directly beneath this stone was a deposit (c. 1 m in depth) of light-colored sandstone rocks that were seemingly placed to fill in the interior of this structure. While excavations of this structure are incomplete, the height of the gallery from ceiling to the floor might have been close to 1.2 m.

To the southeast of the megalith was a succession of collapsed flat stone slabs that follow the overall orientation of the building. In the excavation profiles there were some additional slabs, resting horizontally, suggesting that they were probably additional roofing stones. With respect to stratigraphic and architectural relationships, the megalithic stone is approximately 40 cm below, and runs under, the base of Wall 4, a second façade wall that covers Wall 3. It is therefore likely that this feature was connected with Wall 3 and corresponds to the earliest known phase of building at Canchas Uckro.

Additional evidence for the earliest known phase of architecture at Canchas Uckro comes from the platform summit. Excavations in this area exposed two small circular structures along the western side of the platform (Figure 8-7) (Nesbitt et al. 2021). Both buildings had abundant pottery refuse, as well as stone tools, and animal bone on the



Figure 8-4 Photograph of a section of the first phase façade wall (photograph taken by Jason Nesbitt)

Table 8-1 List of calibrated radiocarbon dates and their contexts from Canchas Uckro. Dates were calibrated with the Mixed Calibration curve (Marsh et al. 2018) using OxCal v. 4.4.

Lab	Archaeological Context	Material	C14 date	68.3% (Mixed)	95.4% (Mixed)
UCI-213826	Secondary burial from the abandonment phase of Canchas Uckro.	Human bone	2560 + 20	790(39.3%)752 682(11.6%)668 632(3.9%)624 610(13.4%)592	795(43.2%)746 689(14.8%)664 644(37.4%)550
UCI-185299	Secondary burial from the abandonment phase of Canchas Uckro.	Human bone	2565 + 20	792(47.5%)754 681(10.0%)669 608(10.8%)594	796(50.7%)747 688(13.6%)664 643(31.1%)564
PSU-4539	Secondary burial from the abandonment phase of Canchas Uckro.	Human bone	2570 + 20	794(54.0%)756 680(7.3%)670 606(7.0%)596	800(58.5%)748 687(11.6%)666 642(25.4%)567
UGAMS-43763	Unit 8D, Layer 2A, Between Walls 4 and 5 (organic layer), Structure 4. Phase 2.	Charcoal	2690 + 20	832–802	898(19.6%)861 846(75.9%)796
PSU-1399	Unit 3, Layer 1 (midden). Phase 2.	Deer bone (Hippocamelus antisensis)	2705 + 25	894(20.8%)874 838(47.5%)806	900–802
PSU-1413	Unit 4, Layer 3. Phase 2.	Deer bone (Odocoileus virginianus)	2715 + 25	896(27.2%)872 840(41.1%)809	902–806
Beta-445852	Unit 3, Layer 1. Phase 2.	Deer bone (Odocoileus virginianus)	2720 + 30	896(30.2%)870 842(38.1%)811	908–804 BC
PSU-1412	Unit 4, Layer 2, between Walls 3 and 4. Phase 2.	Deer bone (Odocoileus virginianus)	2775 + 35	930–832	994–820
UGAMS-43762	Unit 8D, Layer 2, Structure 6. Phase 2.	Charcoal	2810 + 20	982–906	1010(90.4%)896 872(5.1%)843
UGAMS-53473	Unit 8D, Layer 2A, secondary burial of elderly female. Phase 2.	Human bone	2820 + 25	994(68.3%)917	1044(1.4%)1033 1018(90.6%)896 871(3.5%)844
DAMS-015887	Unit 4, Layer 2, behind Wall 3. Phase 1.	Charcoal	2865 + 29	1051(54.1%)970 956(14.2%)932	1114–921
UGAMS-40219	Structure 1 Floor. Phase 1.	Charcoal	2920 + 20	1122(62.7%)1046 1029(5.6%)1020	1198(7.3%)1171 1164(6.3%)1142 1131(81.9%)1010
UGAMS-40218	Structure 1 Floor. Phase 1.	Charcoal	2930 + 20	1187(3.4%)1181 1156(4.8%)1148 1127(60.1%)1049	1201(23.3%)1141 1134(72.2%)1015

floor, suggesting that they functioned as houses (Nesbitt et al. 2021). Furthermore, one of these structures (Structure 1) had a hearth located along its wall. Two samples obtained from a charcoal concentration associated with this hearth yielded nearly identical radiocarbon measurements of 2930 ± 20 (UGAMS-40218) and 2920 ± 30 (UGAMS-40219).



Figure 8-5 Drone image of Canchas Uckro showing the location of the “megalithic” gallery feature (photograph taken by Bebel Ibarra Ascencios)



Figure 8-6 Image of the large stone megalith associated with the first phase of architecture (photograph taken by Jason Nesbitt)

2.2 Architectural Sequence of Canchas Uckro: Second Phase

During the second phase, the first façade was intentionally buried and a new one (Wall 4) was constructed. Walls 3 and 4 are separated by a combination of boulder fill and organic deposits that reach depths of approximately 1–1.2 m and completely cover Wall 3 (Figure

8-8). Within this layer was a high quantity of materials including pottery, bone tools (including a snuff tube and spoon), marine shell and mammal remains, most of which correspond to two species of deer (Nesbitt et al. 2023). A radiocarbon sample taken from



a



b

Figure 8-7 Photographs of Structures 1 (a) and 2 (b) on the platform summit. Note the stone hearth feature in Structure 1 (photograph taken by Jason Nesbitt)



Figure 8-8 Profile showing the separation between Walls 3 and 4 (photograph taken by Jason Nesbitt)

a taruka (*Hippocamelus antisensis*) bone from this context produced a measurement of 2775 ± 35 BP (PSU-1412).

A second radiocarbon sample was taken from a deep basal layer that consisted of abundant animal bone, mixed with disarticulated human remains of a single individual. The human bone was highly fragmented with the preservation of approximately 15% of the skeleton. Analysis of the preserved parts of the pelvis, radius, vertebrae, and femur by bioarchaeologist Eden Washburn determined that the individual was an elderly female aged ~50–60 years (Nesbitt et al. 2023 in press). A sample of bone from this secondary interment was dated and yielded a radiocarbon measurement of 2820 ± 25 (UGAMS-53473). Stratigraphically, this individual was buried in the layer immediately overlying the megalithic stone described earlier and dates the beginning of the burial of the first phase of architecture.

The fills described above constitute the materials over which Wall 4 was constructed. Wall 4 constitutes a new façade, representing a construction episode in which the platform was expanded horizontally, and new buildings were added. This new façade measures at least 1.25 m in height and is constructed from quarried boulders that are set in mud mortar and separated by smaller chinking stones (or *pachillas*), a masonry technique that distinguishes the new façade from the old (Figure 8-9). At the base of the wall was a hard-packed, mottled clay layer that formed the new upper terrace surface. A charcoal sample from this layer provided a measurement of 2715 ± 25 (PSU-1413).

Larger scale excavations in 2019 exposed numerous quarried boulders that formed the remnants of collapsed buildings. The best-preserved structure was a circular building (Structure 3) that measured c. 3 m in diameter and was positioned just off the midline of the platform (Figure 8-10). While this building resembles the dwellings from the top of the platform in terms of form, it also exhibits characteristics that suggest it had a ceremonial function. Within the center of the building was a large stone that was 2 m in height that would have been placed upright in the middle of the building. In this sense, the stone is reminiscent of a *huanca*, a sacred stone that represented a petrified, animated ancestor and was also used as symbolic territorial markers (e.g., Dean 2010). For these reasons, it is probable that Structure 3 was a ceremonial building associated with the second phase of architecture.



Figure 8-9 Photograph of Wall 4, which constitutes the second phase façade of the platform (photograph taken by Jason Nesbitt)

Another feature from this context was a partially preserved building referred to as Structure 6 (Figure 8-11). A preserved corner indicates that the building was either square or rectangular. Within this building was an earthen surface with burned orange segments, as well as a circular charcoal concentration that may have been a posthole, and small quantities of pottery. A sample of charcoal from this deposit yielded a radiocarbon measurement of 2810 ± 20 BP (UGAMS-43762).

Lastly, on this terrace surface we encountered a poorly built construction referred to



Figure 8-10 Photograph of Structure 3 (photograph taken by Jason Nesbitt)



Figure 8-11 Photograph of the stone foundation of Structure 6 (photograph taken by Jason Nesbitt)

as Structure 4. This structure was collapsed and appears to have been hastily built. It is stratigraphically above Structure 6. Underlying this deposit was a thick layer of organic material, including some animal bone. A charcoal sample obtained from this layer produced a radiocarbon date of 2690 ± 20 BP (UGAMS-43763). This building likely represents one of the last structures built during Canchas Uckro's occupation.

The two building phases described from the façade are replicated at other parts of the site. On the southwest side of the platform, a 5 x 5 m excavation unit uncovered two different platform retaining walls that are separated by organic fill layers. The earliest wall (Wall 2) is characterized by a single course of sandstone boulders. Wall 2 was covered over by a fill deposit consisting of quarried boulders and dark, artifact rich soils. Within these layers, abundant faunal remains and other organic remains were recovered (Nesbitt et al. 2023). A radiocarbon measurement of a taruca (*Hippocamelus antisensis*) phalanx yielded a radiocarbon date of 2705 ± 25 BP (PSU-1399). A second date from a white-tailed deer (*Odocoileus virginianus*) bone provided a similar measurement of 2720 ± 30 BP (Beta-445852). This deposit constituted the fill for the construction of a subsequent building phase that interred the first (Figure 8-12).

Wall 1 was constructed following the interment of Wall 2 and consists of two courses of sandstone blocks. The lower course of the wall consists of medium -sized, roughly shaped stones. The stones that make up the upper course of the wall are slumped towards the west. Based on the nature of the masonry, it is probable that they functioned as retaining walls for the upper part of the platform.

2.3 Abandonment Context

At the very upper part of the layer covering Wall 4, there was a small quantity of faunal remains. This layer covered both Walls 3 and 4 and probably formed as the result of intentional burial of Canchas Uckro. In this near-surface layer, we found another



Figure 8-12 Photograph showing the relationships between Walls 1 and 2 (photograph taken by Jason Nesbitt)

secondary burial of a partially preserved human skeleton. Osteological analysis by Anne Titelbaum determined that this was an adult male between approximately 35 and 39 years of age (Nesbitt et al. 2023 in press). Three radiocarbon measurements of 2570 ± 20 BP (PSU-4539), 2565 ± 20 BP (UCI-185299), and 2560 ± 20 BP (UCI-213826) were obtained from this individual. As will be discussed later, this tight clustering of dates was crucial to precisely determining the age of abandonment of Canchas Uckro.

3. Chronology

In this section, we discuss the chronological data from Canchas Uckro. We begin by presenting an analysis of the site's 13 radiocarbon dates. Included in the discussion of the absolute chronology is a Bayesian model that ties together the calibrated radiocarbon measurements with the architectural building sequence. Analysis of absolute dating is followed by a brief description of extant pottery styles. Taken together, the absolute and relative chronological information presents a robust model indicating that Canchas Uckro was occupied between 1100 and 800/750 BC.

3.1 Radiocarbon Dating and Bayesian Modeling of the Building Sequence

Radiocarbon measurements pertain to the first ($n=3$) and second ($n=7$) building phases, as well as the secondary interment from the abandonment layer ($n=3$). All measurements were calibrated using a mixed calibration curve (Marsh et al. 2018). In recent years, there has been some dispute about whether the Northern (IntCal) or Southern (SHCal) Hemisphere calibration curve is most appropriate to use in certain parts of western South America (see Rick et al. 2010 for a discussion regarding calibration at Chavín de Huántar). Part of the disagreement stems from uncertainties of the degree of atmospheric inputs from the Northern Hemisphere during the South American Southern Monsoon (Marsh et al. 2018). At Chavín de Huántar, which is situated in the eastern Andes, archaeologists have used both IntCal (e.g., Kembel and Haas 2015; Rick et al. 2010) and SHCal (Burger 2019; Contreras 2010; Mesía Montenegro 2022). As an alternative, Marsh and colleagues (2018) propose using a mixed curve that accounts for atmospheric inputs from the Northern (IntCal20; Reimer et al. 2020) and Southern (SHCal; Hogg et al. 2020) Hemispheres. Differences between IntCal20 and SHCal20 are on average less than 50 years (Hogg et al. 2020; see also Contreras 2022 for a discussion of the archaeological implications). Nevertheless, because of these ambiguities, we calibrate all of our radiocarbon measurements using the mixed curve (see Nesbitt et al. 2020 for a comparison of calibrated dates pertaining to the Early Horizon and Early Intermediate Period using IntCal, SHCal, and the mixed curves).

Analysis and interpretation of these dates were subjected to Bayesian modeling, which combined the radiocarbon measurements with the building sequence to create a more fine-grained absolute chronology (see Hamilton and Krus 2018). In specific, we were most interested in determining the occupation span of the site to compare with the radiocarbon chronology of Chavín de Huántar. Furthermore, our model was also aimed at estimating the site's abandonment, a question that proved critical in understanding the

relationship between Canchas Uckro and Chavín de Huántar. The command prompts used in OxCal v. 4.4 for this analysis are presented in Appendix 1.

3.2 Results

According to our model (Figure 8-13), the earliest known phase at Canchas Uckro dates between c. 1100–950 BC. Associated with this first phase was the construction of the original platform and probable gallery. In addition, the two circular houses identified on the platform summit were occupied indicating that from the outset the site housed a residential population. It is probable that at that time, the platform was close to its current size and height. It is important to stress that while an earlier occupation cannot be ruled out, deep stratigraphic excavations within various locations of the platform have thus far failed to define occupations dating to earlier parts of the Initial Period.

The second phase of architecture dates between 950 and 800 BC. In this phase the earlier platform was buried and was expanded outward with the construction of a new

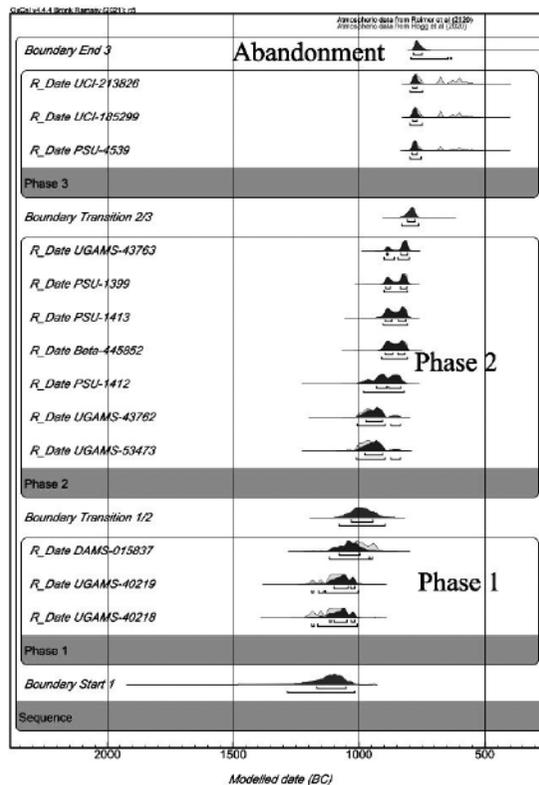


Figure 8-13 Bayesian model of the Canchas Uckro building sequence. Radiocarbon measurements were calibrated using the Mixed Calibration curve (Marsh et al. 2018) using OxCal v. 4.4. (image produced by Jason Nesbitt)

façade and retaining walls. Other buildings, including the circular feature with a probable *huanca* were associated with the new terrace surface connected with this phase. There was a subtle shift in masonry technique with increased use of chinking stone, but the overall dimensions and orientation of the platform remained the same as the previous phase. It is important to stress that the gallery, which was likely part of the first phase of architecture was completely buried as well during this time.

The Bayesian model generated a tightly constrained age estimate for Canchas Uckro's abandonment. Three dates show that Canchas Uckro ceased to function as a settlement between 800 and 750 BC. Other than the burial, no architectural features, or materials (see below) from this time have been recorded. If we accept this date for abandonment, our chronological span model (see Appendix 1) implies that Canchas Uckro might have been occupied for as long as three hundred to three hundred and fifty years (68.3% confidence interval) (1100–800/750 BC), or between 15 and 18 generations (at 20 years per generation).

3.3 Pottery and Chronology

Preliminary analysis of a sample of 7,801 sherds from both phases of architecture at Canchas Uckro supports the radiocarbon chronology (Nesbitt et al. 2021: Table 6.2). Examination of 562 rims revealed an assemblage that was characterized primarily by neckless ollas (48%), bowls (37.7%), and jars (12.6%), with rare occurrences of bottles (1.6%) (Figure 8-14). Vessels mainly consist of plainwares with reddish and brown surfaces. There are also numerous instances of blackware sherds. Red slip painting occurs in some vessels, especially in bowls and to a lesser extent jars. Decoration consisted of simple incision, zone-incision, zoned punctation, and punctation. In this sense, many of the stylistic attributes of the pottery resemble styles present in the assemblages pertaining to the Urabarriu Phase (c. 950–800 BC) at Chavín de Huántar (Burger 1984; see also Mesía Montenegro 2022), as well as other styles dated to the late Initial Period from elsewhere in the north-central highlands (Burger 1985; Rozenberg and Picon 1990).

Yet at the same time, a significant proportion of the Canchas Uckro assemblage appears unrelated to the earliest pottery at Chavín de Huántar. Most notable are forms and decorative techniques that are strongly linked with pottery styles from the adjacent eastern Andean slopes and *ceja de selva* region (Nesbitt et al. 2021). For instance, there was a relatively high quantity of carinated vessel shapes adorned with zone-hatching arranged in geometric patterns that characterize the Waira-jirca style in the upper Huallaga region (e.g., Izumi and Terada 1972). A recent radiocarbon dating project at the site of Jancao, a large mound near the city of Huánuco, demonstrates that the carination and zone-hatching similar to that found at Canchas Uckro first occurs in the late second millennium BC, confirming its late Initial Period date (Kanezaki et al. 2021).

Negative evidence reinforces the assertion that Canchas Uckro was abandoned by 800–750 BC. Despite excavations in different parts of the platform, no later Early Horizon styles have been found. Particularly notable is the absence of any of the styles pertaining to the Janabarriu Phase (800/700–400 BC; c.f., Burger 2019; Rick et al. 2010) at Chavín de Huántar. Janabarriu Phase pottery include vessels decorated with stamped

and incised circle and dot designs, “S”-motifs, red-slipped bowls and bottles with graphite or manganese pigments within the incisions, as well as several other characteristic forms that do not appear in earlier times (Burger 1984; see also Rick and Bazán 2014; Rick et al. 2010). It is important to note that some of these pottery styles are distributed over a wide area during the Early Horizon and are one proxy for increased interregional culture contact and interaction (Burger 1988).

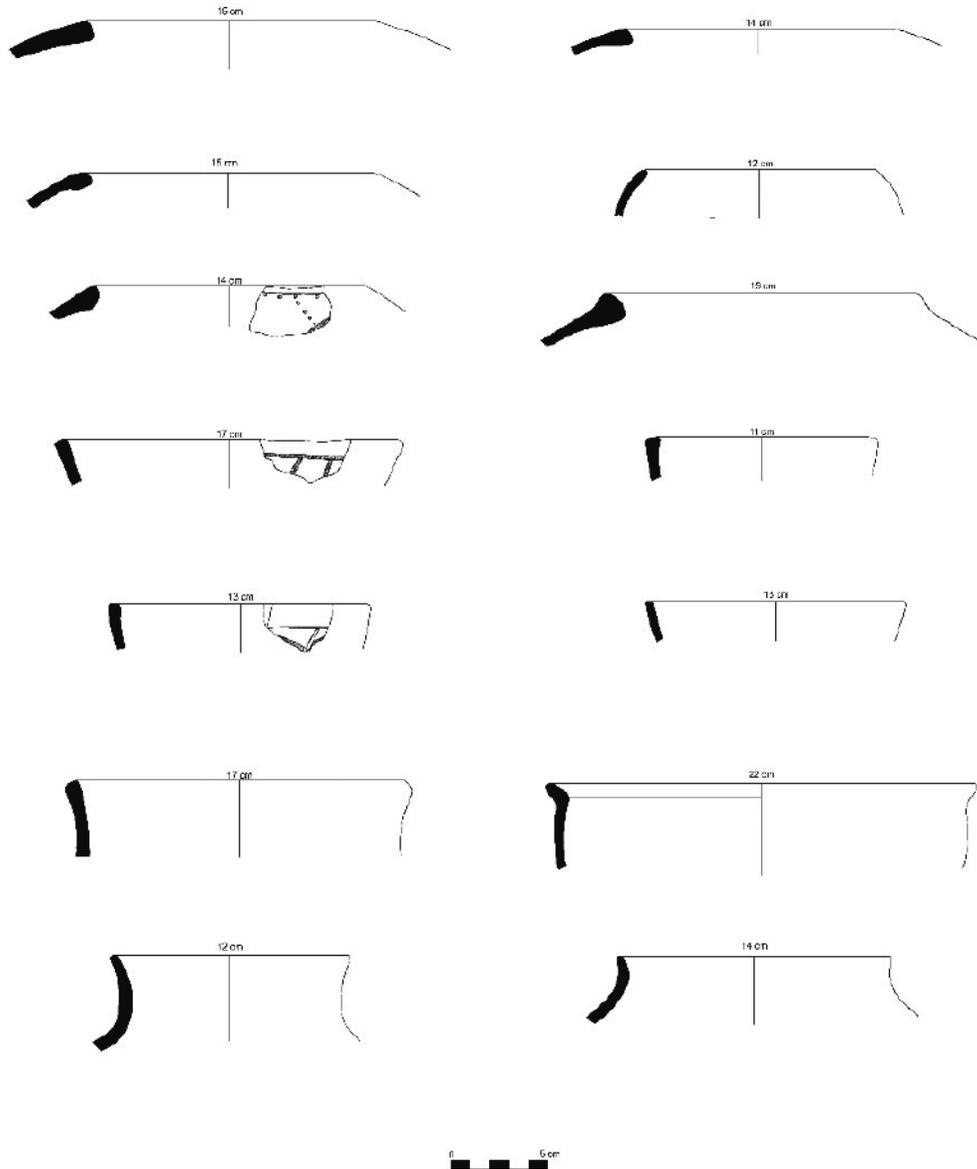


Figure 8-14 Drawings of pottery forms from Canchas Uckro (image produced by Jason Nesbitt)

4. Discussion

In this section, we discuss the implications of the chronology of Canchas Uckro with respect to the development of Chavín de Huántar. To accomplish this objective, we compare the radiocarbon sequence from Canchas Uckro with two different radiocarbon chronologies published from the monumental (Kembel and Haas 2015) and residential (Burger 2019; Mesía Montenegro 2022) sectors of Chavín de Huántar.

4.1 Comparing the Chronology and Building Sequence of Canchas Uckro with the Temple Core of Chavín de Huántar

Our understanding of the construction sequence of the temple core of Chavín de Huántar has been modified in the last few decades. Originally, this part of the site was divided into an original “Old Temple,” followed by a series of three later additions that constituted the “New Temple” (Rowe 1962). Recent archaeological investigation postulates that the construction history of the temple (or monumental) core of Chavín de Huántar was more complex than previously thought. Based on the architectural analysis, Silvia Kembel and colleagues have produced an elaborate model of Chavín de Huántar’s construction history that consists of 15 “phases” that are grouped within 5 larger, site-wide “construction stages” (Kembel 2001, 2008; Rick 2008; Rick et al. 1999). These stages are referred to as the “Separate Mound Stage,” “Expansion Stage,” “Consolidation Stage,” “Black and White Stage,” and “Support Stage” (Kembel 2001, 2008; Rick 2008). The creation of this model was based on architectural analysis, mapping, and the documentation of building seams (Kembel 2001, 2008). Furthermore, in a recent article, Kembel and Haas (2015) published 32 radiocarbon dates that were obtained from charcoal within the mortars of the architecture. Based on the 32 radiocarbon measurements, they argue that the temple functioned between c. 1200 BC and 500 BC.

Before evaluating chronological comparisons with Canchas Uckro, it should be emphasized that there are disagreements about the relative and absolute chronology of Chavín de Huántar’s building sequence (see Burger 2019, 2021; Burger and Salazar 2008: 92–94; Watanabe 2013). Nevertheless, Kembel and Haas’s (2015) radiocarbon chronology provides a baseline to understanding elements of the site’s absolute chronology.

Figure 8-15 presents a multiplot of the unmodelled calibrated dates associated with the building phases from Canchas Uckro and Kembel’s construction stages from the temple at Chavín de Huántar. As can be seen from this graphic, many of the radiocarbon dates at Chavín de Huántar do not accord with the architectural sequence (see also Burger 2019: 388). Part of the reason for these inconsistencies may rest in the complicated site formation processes that characterize the monumental architecture, including the alteration of ritual contexts in the galleries (Rick 2017). For this reason, the comparisons we make here are tentative and selective.

Inspection of the multiplot suggests that the first phase of architecture at Canchas Uckro was contemporary with, or possibly slightly predates, the first stage of public architecture at Chavín de Huántar. In the Kembel sequence, this is referred to as the

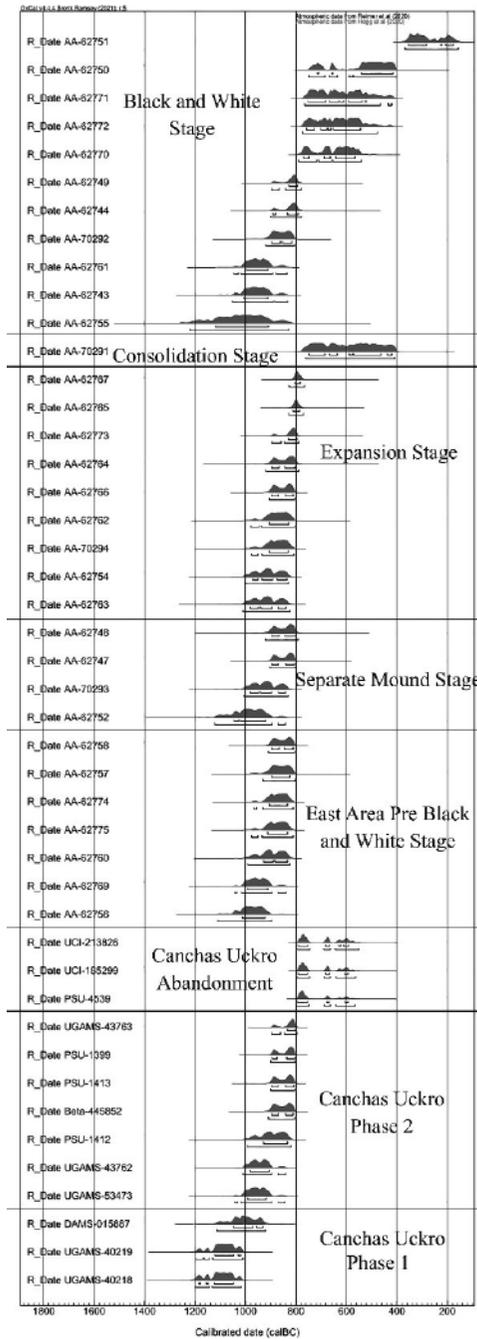


Figure 8-15 Multiplot comparing the radiocarbon chronologies between Canchas Uckro and Kembel's (2001, 2008; Kembel and Haas 2015) building sequence from the temple architecture at Chavin de Huántar. Radiocarbon measurements were calibrated using the Mixed Calibration curve (Marsh et al. 2018) using OxCal v. 4.4. (image produced by Jason Nesbitt)

“Separate Mound Stage.” During this stage there were two platforms: Building B and the NEA (northeast corner of Building A), both of which were rectangular platforms (Kembel 2008). Building B was a low platform that measured c 37 x 35m (measurements estimated from Kembel 2008: 47, fig. 2.17). On its summit was a rectangular edifice referred to as the “Inner Lanzón Rectangle,” a free-standing structure measuring 6.65 x 6.79m (Kembel 2001: 63). A single charcoal sample associated with the Inner Lanzón Rectangle dates to 2847 ± 43 BP (AA-62752; 1192–896 BC [92.4% CI]; date recalibrated from Kembel and Haas 2015 by the authors using Mixed Curve). This date is broadly coeval with the earliest dates from Canchas Uckro.

The NEA was a second rectangular platform that measures 39.4 x 34.7 m (Rick et al. 1999: 195), but its height at this early stage was unknown. Associated with the NEA building were the Escalinata, Alacenas, East Face and Zanja galleries (Kembel 2008). According to the relative building sequence, the NEA was apparently constructed prior to Building B and for this reason Kembel argues that the construction of the Separate Mound Stage may have begun as early as 1200 BC (Kembel and Haas 2015). However, neither assertion corresponds with the archaeological evidence. Two radiocarbon dates from the Alacenas Gallery (AA62748 and AA62747) and one from the East Face Gallery (AA70293) postdate the measurement from Building B (see Figure 8-15).

Radiocarbon dates from the second phase of Canchas Uckro largely overlap with Kembel’s Expansion Stage. Kembel (2001, 2008) argues that the Expansion Stage is a time of significant growth in the monumental core in which Buildings A, B, and C collectively formed the site’s characteristic U-shaped form. Numerous galleries were apparently built or expanded during this stage. It is important to stress that several of the radiocarbon dates associated with the Expansion Stage overlap with, or in some cases pre-date, those of the Separate Mound Stage (see Figure 8-15).

Thus, the chronological data indicates that Canchas Uckro was coeval with the early (pre-800 BC) phases of architecture at Chavín de Huántar. It should be stressed that in addition to probable contemporaneity with many of the buildings described in Kembel’s sequence, Canchas Uckro was probably coeval with other key buildings in temple core. For instance, in terms of radiocarbon dating, the dates from Canchas Uckro overlap with a measurement from the Circular Plaza that falls between 900–800 BC (Rick et al. 2010). While Kembel places this key feature much later in her sequence, the radiocarbon dates are consistent with other scholars’ view that the Circular Plaza and Ofrendas Gallery date to the late Initial Period (summarized in Burger 2021).

More controversial is the nature of monument building at Chavín de Huántar after 800 BC. Kembel and colleagues refer to this period as the Black and White Stage, which they contend was a period of architectural stasis after c. 800 BC. However, the radiocarbon dates of this stage are divergent. While Kembel and Rick (Kembel 2001, 2008; Rick 2008) argue for a slowing of building activities, they do assert that the temple was operating during this time before ceasing to function around 500 BC. In contrast, Burger (2019) considers this time, which corresponds to the Janabarriu Phase, to represent the time of the temple’s greatest influence and growth (see also Mesía Montenegro 2022: 895).

4.2 Comparing the Canchas Uckro Sequence with the Residential Sectors of Chavín de Huántar

Meaningful temporal comparisons can also be made with the sectors found outside of the monumental core (see Burger 1984; Gamboa 2016; Mesía Montenegro 2022; Sayre 2010). In these areas, the relative and absolute chronological sequence is clearer because stratified deposits were associated with precise radiocarbon measurements (Burger 2019). For instance, Burger was able to construct a three-phase chronology of the site's occupation using radiocarbon dates and changes in pottery styles (Burger 1984, 2019). This sequence was used to trace the growth and of the residential/urban sector and is anchored by 17 radiocarbon measurements.

Figure 8-16 compares the Canchas Uckro sequence with recently published radiocarbon dates from the residential zone of Chavín de Huántar (Burger 2019). As is illustrated in this graphic, the earliest phase at Canchas Uckro predates the Urabarriu Phase occupation in this sector of Chavín de Huántar. However, the radiocarbon dates from the second construction phase at Canchas Uckro clearly overlap with the Urabarriu Phase (c. 950–800 BC). As noted earlier, the pottery from Canchas Uckro is similar to some of the styles represented in Urabarriu Phase assemblages. Burger (1984, 1992: 159) hypothesized that during the Urabarriu Phase the residential settlement at Chavín de Huántar was relatively small, and perhaps covered an estimated area of 6 hectares and a population of 500 people. Furthermore, the dates from Canchas Uckro are contemporary with the earliest domestic occupations from the Wacheqsa sector, an area located just to the north of the monumental core of Chavín de Huántar (Mesía Montenegro 2022).

Crucially, the abandonment of Canchas Uckro is contemporary with the onset of the Janabarriu Phase (c. 800/700–400 BC). This was a time of rapid settlement growth at Chavín de Huántar in which the residential zone covered an area of at least 50 hectares (Burger 1984, 2019: 374; Gamboa 2016; Sayre 2010). Coupled with this growth were a series of socioeconomic changes. The population living within these sectors practiced a variety of craft production activities and there is also evidence for social differentiation (Burger 1984; Mesía Montenegro 2022; Sayre 2010; Sayre et al. 2016). Furthermore, there are changes in the economy with the intensified utilization of camelids (Miller and Burger 1995; Rosenfeld and Sayre 2016). It is also at this time that there was an influx of obsidian and other exotic materials into Chavín de Huántar (Burger 1984; Burger et al. 2006; Sayre et al. 2016), suggesting greater ties with distant regions.

4.3 Implications of Abandonment and Possible Population Movements in the Chavín Heartland

The abandonment of Canchas Uckro coincides with a period of expansion in the residential and ceremonial sectors of Chavín de Huántar around 800/700 BC during the Janabarriu Phase. At this time, Burger (1984) has hypothesized that the site reached “proto-urban” (or urban) proportions with a large population of at least 4,000 people inhabiting an area of 40–50 hectares. Until recently, our understanding of the factors underlying this growth was poorly understood. We maintain that Canchas Uckro provides one glimpse into the historical processes of incipient urbanism in which the site was

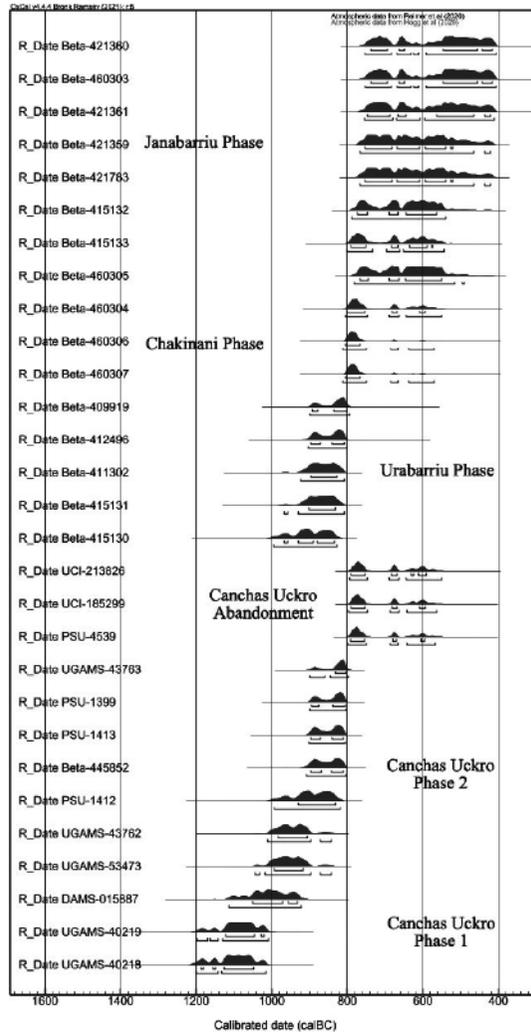


Figure 8-16 Multiplot comparing the radiocarbon dates of Canchas Uckro and the areas outside of Chavín de Huántar's monumental core (Burger 2019). Radiocarbon measurements were calibrated using the Mixed Calibration curve (Marsh et al. 2018) using OxCal v. 4.4. (image produced by Jason Nesbitt)

rapidly abandoned by no later than 750 BC. The detailed chronological modeling of Canchas Uckro leads us to hypothesize that like other pre-industrial urban centers, Chavín de Huántar's development was the partial product of in-migration and concomitant ruralization of the surrounding landscape (e.g., Algaze 2018; Yoffee 2005).

However, this same chronological modeling also shows that Canchas Uckro was contemporary with (or possibly predated) the foundation of Chavín de Huántar. It is

further possible that in the late second millennium BC Canchas Uckro may have been of comparable size to the buildings of the Separate Mound Stage and the two sites may have briefly been peer-centers around 1100–1000 BC (Nesbitt 2023). If that is the case, why Canchas Uckro was abandoned while Chavín de Huántar continued to thrive after 800 BC is a particularly salient question.

One answer to that question may rest in the clear differences between the two centers that began to manifest themselves by c. 900 BC. By this time, Chavín de Huántar clearly exhibited several clear features that made this site unique in the Conchucos region. For instance, much of the temple had more elaborate architectural features, like the circular plaza, and galleries that were either rare or absent at sites like Canchas Uckro. Relatedly, Chavín de Huántar also boasted a range of early stone sculptures (Bischof 2008; Burger 1992; Rowe 1962), such as the Lanzón and Tello Obelisk that are also not found at surrounding sites. Lastly, there is compelling evidence that from its inception, Chavín de Huántar was embedded in long-distance networks (Burger and Salazar 2008). This is most apparent in the Ofrendas Gallery, a feature with offerings of numerous exotic ceramic vessels and other foreign materials (Lumbreras 1993, 2007). While the chronological position of this feature has been debated (Burger 2021; Kembel 2008; Kembel and Haas 2015) the associated pottery is clearly of late Initial Period date. Non-local styles include Cupisnique from the north coast, from the northern highlands, and central coast, as well as a stone vessel from the northern *ceja de selva* (Lumbreras 1993, 2007). In contrast, exotic goods at Canchas Uckro are rare, save for pottery connecting the site to the adjacent upper Marañón and Huallaga regions (Nesbitt et al. 2021). In other words, part of what drew people to Chavín de Huántar was its growing prestige as a major religious and cosmopolitan center.

5. Conclusions

This paper strengthens the notion that the Initial Period was a time of dynamic change in highland Peru. By 1000 BC (or slightly earlier) numerous centers emerged including Pacopampa (Seki et al. 2010), Kuntur Wasi (Inokuchi 2014), Campanayuq Rumi (Matsumoto 2010, and Atalla (Young 2020), among others. In Conchucos, the late second millennium BC witnessed the foundation of Chavín de Huántar, as well as other surrounding sites, such as Canchas Uckro. All of these sites continue to thrive into the Early Horizon, with the exception of Canchas Uckro. As we argue in this article, Canchas Uckro was abandoned as its inhabitants moved into a rapidly growing Chavín de Huántar. In this respect, we advocate that archaeologists focused on the Formative Period follow scholars working in later time periods in incorporating human movement into their models explaining regional historical processes (e.g., Goldstein 2005; see also Anthony 1990; Yoffee 2005 for discussions). To accomplish this objective requires integrating traditional archaeological data (such as pottery, architecture, and radiocarbon data) with highly resolved absolute chronologies (see Barrier 2017) and newer scientific techniques such as stable isotope analysis to test hypotheses regarding mobility and migration (e.g., Washburn et al. 2021).

In closing, it is important to note that not all of the Conchucos region was abandoned at 800/750 BC. Survey and excavation data demonstrate that many of the mound sites found throughout this area thrived after 800 BC (Burger 1982, 2008b; Diessel 2004; Ibarra 2004; Nesbitt et al. 2020; Tello 1960). Future research is now needed to test these sites to establish if there were functional changes in how they related to Chavín de Huántar.

Appendix

The results of the Bayesian chronological model presented in this article was determined by inputting the following command into OxCal v.4.4.

```
{
  Curve("IntCal20","IntCal20.14c");
  Curve("SHCal20","SHCal20.14c");
  Mix_Curve("Mixed","IntCal20","SHCal20",U(0,100));
  Sequence()
  {
    Boundary("Start 1");
    Phase("1")
    {
      R_Date("UGAMS-40218",2930,20);
      R_Date("UGAMS-40219",2920,20);
      R_Date("DAMS-015837",2865,29);
      Span("Span 1");
    };
    Boundary("Transition 1/2");
    Phase("2")
    {
      R_Date("UGAMS-53473", 2820,25);
      R_Date("UGAMS-43762",2810,20);
      R_Date("PSU-1412",2775,35);
      R_Date("Beta-445852",2720,30);
      R_Date("PSU-1413",2715,25);
      R_Date("PSU-1399",2705,20);
      R_Date("UGAMS-43763",2690,20);
      Span("Span 2");
    };
    Boundary("Transition 2/3");
    Phase("3")
    {
      R_Date("PSU-4539",2570,20);
      R_Date("UCI-185299",2565,20);
    }
  }
}
```

```

    R_Date("UCI-213826",2560,20);
    Span("Span 3");
};
Boundary("End 3");
Difference("DIFFERENCE", "End 3", "Start 1");
Span("Span Total");
};
};

```

Note

- 1) Conchucos refers to a series of river valleys located on the southeastern side of the Cordillera Blanca that drain into the upper Marañón.

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